Classical biological control of Cape ivy, a pest vine from South Africa

Dr. Joe Balciunas

Cape ivy (*Delairea odorata*), or German ivy, is often still referred to by its older scientific name, *Senecio mikanioides*.

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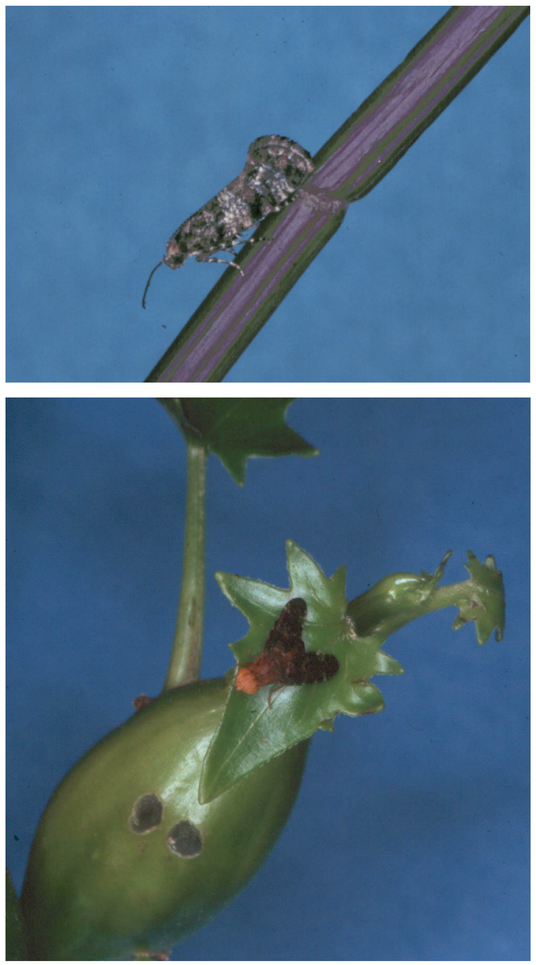
(Above) Cape ivy infestation at Mt. Sutro, near San Francisco, CA

Cape ivy - the problem:

Cape ivy (also called German ivy), has the currently accepted scientific name of *Delairea odorata*, although in the older literature it is referred to as *Senecio mikanioides*. This vine, native to South Africa, was once used as an ornamental, but has escaped to become a pest along the Pacific coast (see map at lower right) and Hawaii. Cape ivy is spreading in riparian forests, coastal scrub, grasslands, Monterey pine forest, coastal bluff communities, and seasonal wetlands. At many sites in California and Hawaii, Cape ivy rapidly grows up and over the native vegetation, including small trees, covering and eventually killing them (see photo at upper right). It quickly regrows after mechanical removal or treatment with herbicides.

All along California's coast, local State and National parks, as well as U.S. Forest Service lands are among the casualties of this exotic vine. As an example, Golden Gate National Recreation Area (GGNRA), recently completed a 3-yr, $600,000 project to find and control Cape ivy on their lands. They were able to eradicate only a tiny fraction of the more than 300 infestations in GGNRA.

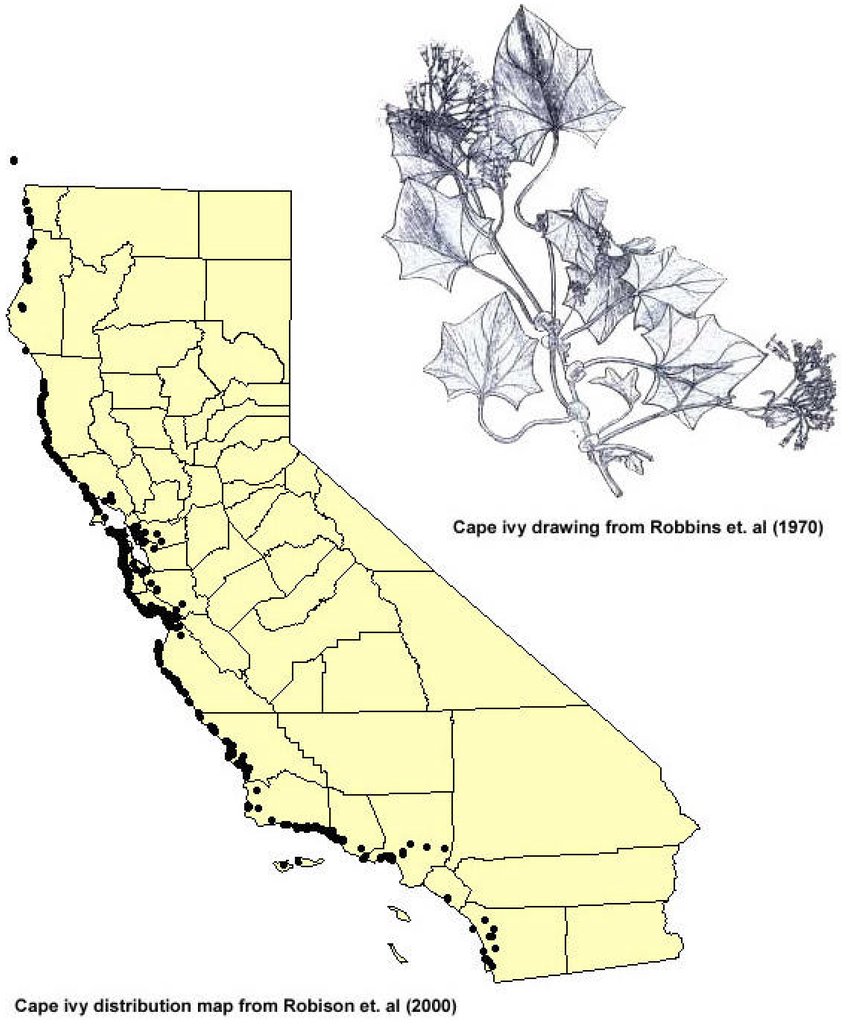


Two potential biological control agents of Cape ivy: a stem-boring moth, *Digitivalva delaireae* (top), and a gall forming fly, *Parafreutreta regalis* (bottom)

A Biological Control Effort Begins...

During a 1996 visit to South Africa, ARS entomologist Joe Balciunas examined all the specimens of this vine at the major herbaria there. He found that it was surprisingly uncommon in its native land. Over the next two years, a coalition of funding agencies, led by the California Native Plant Society, and Exotic Pest Plant Council, assembled the funds necessary to initiate a biological control project against Cape ivy. During 1998 and 1999, scientists at South Africa's Plant Protection Research Institute (PPRI), under Dr. Balciunas's guidance, surveyed throughout South Africa, and identified hundreds of insects associated with this vine. A half-dozen of these showed promise as potential biological control agents.

Since 2001, we have been evaluating the safety and biology of two of these insects: *Parafreutreta regalis* - a gall making fly, and *Digitivalva delaireae* - a stem boring moth, at the ARS quarantine laboratory in Albany, California. Thus far, both look promising in controlling Cape ivy and appear to pose no risk to native plants. We hope to complete testing both these insects by the latter part of 2004, and then seek approval for their release in California.



(Above) A preliminary distribution map of Cape ivy in California and an illustration of flowering Cape ivy